[10191/2175]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	:	Examiner: Davis D. Hwu
Hans LANDER et al.	:	
For: FUEL INJECTOR	:	
	:	Art Unit: 3752
Filed: May 24, 2002	:	
Serial No.: 10/030,586	:	

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office via the Office electronic filing system on **February 6, 2009.**
Signature: /Wendy Espinal/
Wendy Espinal

APPEAL BRIEF TRANSMITTAL

SIR:

Transmitted herewith for filing in the above-identified patent application, please find an Appeal Brief pursuant to 37 C.F.R. § 41.37. A two-month period to respond to the Notice of Appeal filed December 12, 2008 expires on February 12, 2009.

The **$540** Appeal Brief fee is being **paid by credit card**.

The Commissioner is also authorized to charge payment of any additional fees or to credit any overpayment, to the Deposit Account of Kenyon & Kenyon LLP, Deposit Account No. **11–0600.**

Respectfully submitted,

Dated: February 6, 2009

By: /Clifford A. Ulrich/
Clifford A. Ulrich, Reg. No. 42,194 for
Gerard A. Messina (Reg. No. 35,952)

KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

[10191/2175]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	:	Examiner: Davis D. Hwu
Hans LANDER et al.	:	
For: FUEL INJECTOR	:	
	:	Art Unit: 3752
Filed: May 24, 2002	:	
Serial No.: 10/030,586	:	

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office via the Office electronic filing system on **February 6, 2009**.
Signature: /Wendy Espinal/
Wendy Espinal

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

SIR:

On December 12, 2008, Appellants filed a Notice of Appeal from the last decision of the Examiner contained in the Final Office Action dated August 12, 2008 in the above-identified patent application.

In accordance with 37 C.F.R. § 41.37, this brief is submitted in support of the appeal of the rejections of claims 16, and 19 to 31. For at least the reasons set forth below, the final rejections of claims 16, and 19 to 31 should be reversed.

1. REAL PARTY IN INTEREST

The real party in interest in the present appeal is ROBERT BOSCH GmbH of Stuttgart in the Federal Republic of Germany, which is the assignee of the entire right, title and interest in and to the present application.

2. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellants or the assignee, ROBERT BOSCH GmbH, "which may be related to, directly

affect or be directly affected by or have a bearing on the Board's decision in the pending appeal."

3. STATUS OF CLAIMS

Claims 1 to 15, 17, and 18 have been canceled.

Claims 16, and 19 to 31 are pending.

Claims 16, and 19 to 21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of U.S. Patent No. 6,161,781 ("Kojima et al."), U.S. Patent No. 5,335,864 ("Romann et al."), and U.S. Patent No. 6,267,307 ("Pontoppidan").

Claims 22 to 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al., Romann et al., Pontoppidan, and Soviet Union Published Patent Application No. 775364B ("Fedorovich et al.").

Claims 26 to 31 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al., Romann et al., Pontoppidan, and U.S. Patent No. 6,205,983 ("Egizi").

A copy of the appealed claims, *i.e.*, claims 16, and 19 to 31, is attached hereto in the Claims Appendix.

4. STATUS OF AMENDMENTS

In response to the Final Office Action dated August 12, 2008, Appellants submitted a "Response" ("the Response") on November 7, 2008. The Response did not include any proposed amendments to the claims. As such, it is Appellants' understanding that the claims as included in the annexed "Claims Appendix" reflect the current status of the claims.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 16 relates to a fuel injector 5 for use in projecting directly into a combustion chamber 3 of an internal combustion engine. *Specification*, page 3, lines 1 to 7. Claim 16 recites that the fuel injector 5 includes a fuel inlet 7. *Specification*, page 3, line 8. Claim 16 recites that the fuel injector 5 includes a movable valve-closure member 20. *Specification*, page 4, lines 29 to 31. Claim 16 recites that the fuel injector 5 includes a fixed valve seat element 26 to cooperate with the valve-closure member 20 to open and close a valve. *Specification*, page 4, lines 31 to 34. Claim 16 recites that the fuel injector 5 includes a downstream valve end 8 including an outlet component 67 and a fuel outlet. *Specification*,

page 9, lines 8 to 11. Claim 16 recites that the fuel outlet includes at least one discharge orifice 32 of the outlet component 67. *Specification*, page 9, lines 10 to 11. Claim 16 recites that the outlet component 67 including the at least one discharge orifice 32 is configured to be flat, disk-shaped, is arranged directly downstream of the fixed valve seat element 26, and is permanently joined to the fixed valve seat element 26. *Specification*, page 9, lines 8 to 10, and 14 to 19. Claim 16 recites that the discharge orifice 32 of the outlet component 67 is inclined at an angle relative to the longitudinal axis of the valve. *Specification*, page 9, lines 11 to 12. Claim 16 recites that the discharge orifice 32 ends in an outlet area configured as a convexly-arched spray-discharge region 66 that extends beyond the outlet component 67 in a downstream direction, the outlet area being a most downstream portion of the downstream valve end 8. *Specification*, page 9, lines 13 to 14. Claim 16 recites that the outlet component 67 includes a coating around the at least one discharge orifice 32, including at least in an immediate exterior of the outlet area configured as a convexly-arched spray-discharge region 66. *Specification*, page 9, lines 20 to 24.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 16, and 19 to 21 are patentable under 35 U.S.C. § 103(a) over the combination of Kojima et al., Romann et al., and Pontoppidan.

B. Whether claims 22 to 25 are patentable under 35 U.S.C. § 103(a) over the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al.

C. Whether claims 26 to 31 are patentable under 35 U.S.C. § 103(a) over the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi.

7. ARGUMENT

A. Rejection of Claims 16, and 19 to 21 Under 35 U.S.C. § 103(a)

Claims 16, and 19 to 21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al., Romann et al., and Pontoppidan. Appellants respectfully submit that the combination of Kojima et al., Romann et al., and Pontoppidan does not render unpatentable the present claims for at least the following reasons.

As an initial matter, Appellants respectfully disagree with the assertions appearing in the Advisory Action and on page 4 of the Final Office Action that U.S. Patent No. 6,267,307 constitutes prior art against the present application. The publication date of

PCT/FR98/02668 is entirely ***irrelevant*** to whether U.S. Patent No. 6,267,307 constitutes prior art against the present application. It is noted that no rejection has been made to date in the present application based on PCT/FR98/02668. As stated on the face of U.S. Patent No. 6,267,307, June 8, 2000 is its 35 U.S.C. § 102(e) date and its 35 U.S.C. § 371 date. U.S. Patent No. 6,267,307 has absolutely no prior art effect before the June 8, 2000 date. Reversal of all rejections based on U.S. Patent No. 6,267,307 is therefore respectfully requested.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), the prior art must teach or suggest each element of the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). In addition, as clearly indicated by the Supreme Court, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. See KSR Int'l Co. v. Teleflex, Inc., 127 S. Ct. 1727 (2007). Further, the Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. M.P.E.P. §2143.

Claim 16 recites a fuel injector including, *inter alia*, a downstream valve end including an outlet component and a fuel outlet, in which the fuel outlet includes at least one discharge orifice of the outlet component, and in which *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve.*

In contrast, Kojima et al. do not disclose, or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve*, as provided for in the context of claim 16. Instead, Kojima et al. seek to provide a uniform, symmetrical, flat fan-shaped spray over an angle Θ. (Kojima et al., col. 1, line 64 to col. 2, line 20; col. 9, lines 19 to 22; col. 10, lines 41 to 44; and col. 12, lines 1 to 5). In this regard, Kojima et al. merely indicate a rectangular slit injection hole to produce the uniform, symmetrical, flat fan-shaped spray. (Kojima et al., col. 8, lines 44 to 46; col. 9, lines 60 to 64; col. 11, lines 15 to 19; and Figures 8 to 13). Therefore, Kojima et al. do not disclose, or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve*, as provided for in the context of claim 16.

In addition, Romann et al. do not disclose, or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve*, as provided for in the context of claim 16. Instead, Romann et al. merely indicate a metallic perforated disc 22 having spray orifices 37, in which the disc 22 is 0.1mm thick. (Romann et al., col. 2, lines 15 to 18; and Figure). Therefore, Romann et al. do not disclose,

or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve*, as provided for in the context of claim 16.

Independent of the above, even assuming that Romann et al. indicate this claimed feature of claim 16, which is not conceded by the Appellants, it is respectfully submitted that there is no tenable rationale for combining Kojima et al. and Romann et al. As more fully set forth above, Kojima et al. specifically seek to provide a uniform, symmetrical, flat fan-shaped spray. Accordingly, there is no tenable rationale for combining Kojima et al. and Romann et al. since such a combination with the distinct spray orifices of Romann et al. would completely vitiate the stated intended purpose of Kojima et al. Thus, the proposed modification would render the device described by Kojima et al. unsatisfactory for its intended purpose and/or change the principle of operation of the device described by Kojima et al. As such, there is no tenable rationale for making the proposed modification for this additional reason. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984) (there is no suggestion or motivation to make a proposed modification if the proposed modification would render the prior art device being modified unsatisfactory for its intended purpose); In re Ratti, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959) (the disclosures of references are not sufficient to render claims prima facie obvious if the proposed modification or combination would change the principle of operation of the prior art device being modified).

Further, Pontoppidan also does not disclose, or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve*, as provided for in the context of claim 16.

Accordingly, it is respectfully submitted that the combination of Kojima et al., Romann et al., and Pontoppidan does not disclose, or even suggest, all of the features included in claim 16. Therefore, it is respectfully submitted that the combination of Kojima et al., Romann et al., and Pontoppidan does not render unpatentable claim 16 for at least the foregoing reasons.

Thus, as for claims 19 to 21, which depend from and therefore include all of the features included in claim 16, it is respectfully submitted that the combination of Kojima et al., Romann et al., and Pontoppidan does not render unpatentable these dependent claims for at least the reasons more fully set forth above.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

B. Rejection of Claims 22 to 25 Under 35 U.S.C. § 103(a)

Claims 22 to 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al. Appellants respectfully submit that the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al. does not render unpatentable the present claims for at least the following reasons.

As an initial matter, the present rejection should be reversed for at least the reason that U.S. Patent No. 6,267,307 does not constitute prior art against the present application as more fully described above.

Claims 22 to 25 ultimately depend from claim 16. As more fully set forth above, the combination of Kojima et al., Romann et al., and Pontoppidan does not disclose, or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve.* Fedorovich et al. also do not disclose, or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve*, and thus, fail to cure this critical deficiency. In this regard, Fedorovich et al. merely relate to coating.

Accordingly, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al. does not disclose, or even suggest, all of the features included in claim 16, from which claims 22 to 25 ultimately depend. As such, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al. does not render unpatentable claims 22 to 25, which ultimately depend from claim 16.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

C. Rejection of Claims 26 to 31 Under 35 U.S.C. § 103(a)

Claims 26 to 31 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi. Appellants respectfully submit that the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi does not render unpatentable the present claims for at least the following reasons.

As an initial matter, the present rejection should be reversed for at least the reason that U.S. Patent No. 6,267,307 does not constitute prior art against the present application as more fully described above.

Claims 26 to 31 ultimately depend from claim 16. As more fully set forth above, the combination of Kojima et al., Romann et al., and Pontoppidan does not disclose, or even suggest, the feature that *a discharge orifice of an outlet component is inclined at an angle relative to a longitudinal axis of a valve*. Egizi merely indicates two spray shaping passages 34, 36 that provide a targeted split stream spray pattern. (Egizi, col. 3, lines 1 to 3 (emphasis added)). Furthermore, it is respectfully submitted that there is no tenable rationale for combining Kojima et al. and Egizi because Kojima et al. specifically seek to provide a uniform, symmetrical, flat fan-shaped spray. Accordingly, there is no tenable rationale for combining Kojima et al. and Egizi since such a combination would completely vitiate the stated intended purpose of Kojima et al. Thus, the proposed modification would render the device described by Kojima et al. unsatisfactory for its intended purpose and/or change the principle of operation of the device described by Kojima et al. As such, there is no tenable rationale for making the proposed modification.

Accordingly, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi does not disclose, or even suggest, all of the features included in claim 16, from which claims 26 to 31 ultimately depend. As such, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi does not render unpatentable claims 26 to 31, which ultimately depend from claim 16.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

8. CLAIMS APPENDIX

A "Claims Appendix" is attached hereto and appears on the two (2) pages numbered "Claims Appendix 1" to "Claims Appendix 2."

9. EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. No other evidence has been entered by the Examiner or relied upon by Appellants in the appeal. An "Evidence Appendix" is nevertheless attached hereto and appears on the one (1) page numbered "Evidence Appendix."

10. RELATED PROCEEDINGS APPENDIX

As indicated above in Section 2, "[t]here are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the

undersigned to be known to Appellants or the assignee, ROBERT BOSCH GmbH, 'which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.'" As such, there no "decisions rendered by a court or the Board in any proceeding identified pursuant to [37 C.F.R. § 41.37(c)(1)(ii)]" to be submitted. A "Related Proceedings Appendix" is nevertheless attached hereto and appears on the one (1) page numbered "Related Proceedings Appendix."

11. CONCLUSION

For at least the reasons indicated above, Appellants respectfully submit that the art of record does not disclose or suggest the subject matter as recited in the claims of the above-identified application. Accordingly, it is respectfully submitted that the subject matter as set forth in the claims of the present application is patentable.

In view of all of the foregoing, reversal of all of the rejections set forth in the Final Office Action is therefore respectfully requested.

Respectfully submitted,

Dated: February 6, 2009

By: /Clifford A. Ulrich/
Clifford A. Ulrich, Reg. No. 42,194 for
Gerard A. Messina (Reg. No. 35,952)

KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

CLAIMS APPENDIX

16. A fuel injector for use in projecting directly into a combustion chamber of an internal combustion engine, the fuel injector comprising:

a fuel inlet;

a movable valve-closure member;

a fixed valve seat element to cooperate with the valve-closure member to open and close a valve; and

a downstream valve end including an outlet component and a fuel outlet, wherein:

the fuel outlet includes at least one discharge orifice of the outlet component,

the outlet component including the at least one discharge orifice is configured to be flat, disk-shaped, is arranged directly downstream of the fixed valve seat element, and is permanently joined to the fixed valve seat element,

the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve,

the discharge orifice ends in an outlet area configured as a convexly-arched spray-discharge region that extends beyond the outlet component in a downstream direction, the outlet area being a most downstream portion of the downstream valve end, and

the outlet component includes a coating around the at least one discharge orifice, including at least in an immediate exterior of the outlet area configured as a convexly-arched spray-discharge region.

19. The fuel injector of claim 16, wherein the internal combustion engine includes an externally supplied ignition.

20. The fuel injector of claim 16, wherein the internal combustion engine includes an auto-ignition.

21. The fuel injector of claim 16, wherein the coating is provided in a ring shape around the at least one discharge orifice on a downstream exterior surface of the outlet component, and wherein the coating includes a layer containing fluorosilicate.

22. The fuel injector of claim 16, wherein the coating is provided over an entire surface of a downstream exterior surface of the outlet component, and wherein the coating includes a layer containing fluorosilicate.

23. The fuel injector of claim 21, wherein the coating extends into the at least one discharge orifice.

24. The fuel injector of claim 21, wherein the layer containing fluorosilicate is applied by one of spraying and dipping.

25. The fuel injector of claim 22, wherein the coating extends into the at least one discharge orifice.

26. The fuel injector of claim 16, further comprising:

a swirl element to impress a swirl component on fuel to be discharged, the swirl element arranged directly upstream of the fixed valve seat element; and

a guide element to guide the movable valve-closure member, the guide element arranged directly upstream of the swirl element.

27. The fuel injector of claim 26, wherein the guide element includes a dimensionally accurate guide opening to guide the movable valve-closure member.

28. The fuel injector of claim 26, wherein the guide element is disk-shaped.

29. The fuel injector of claim 26, wherein the swirl element is produced by one of stamping, wire electrical discharge machining, laser cutting, etching, and electrodeposition.

30. The fuel injector of claim 26, wherein the swirl element includes an inner swirl chamber and a plurality of swirl ducts.

31. The fuel injector of claim 26, wherein the swirl element is disk-shaped.

EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§1.130, 1.131, or 1.132. No other evidence has been entered by the Examiner or relied upon by Appellants in the appeal.

RELATED PROCEEDINGS APPENDIX

As indicated above in Section 2 of this Appeal Brief, "[t]here are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellants or the assignee, ROBERT BOSCH GmbH, 'which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.'" As such, there no "decisions rendered by a court or the Board in any proceeding identified pursuant to [37 C.F.R. § 41.37(c)(1)(ii)]" to be submitted.